Re: JEM based on Arithmetic Mean [response]

Bob Benson to: Thomas Bateson 10/07/2012 02:03 PM

From: Bob Benson/R8/USEPA/US

To:

Cc: "Bill Brattin" <brattin@srcinc.com>, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, HILBERTJ@UCMAIL.UC.EDU

Thank you for the reply.
I am reading your reply to say that you need a more detailed description, with clearer justification of the decisions made, and more statistical analysis of the fitting. I think these are reasonable requests. The earlier text provided only a general overview. I think Krista's suggestions are helpful in pointing out areas where more detail is needed.
Keep in mind we are not proposing the description of the derivation of the AM JEM to be a stand alone document. It will be included in the overall appendix with the original information (including some needed clarifications, some pointed out by the SAB Panel). Some of the general issues (intallation of engineering controls, use of IH data without regard to different sampling duration, and others) apply to both GM and AM JEMs. I propose that these general issues be included in earlier sections of the appendix.
Linda is working on the variance-weighted fitting for all of the jobs. I assume she can also provide the GOF testing using the Chi squared statistics. If you have additional need for statistical testing, please let us know by replying to all. Bill can then request that Linda do the calculations as her schedule permits.
Our sense is that whether we use a variance-weighted or unweighed fit or whether we use a linear or exponential fit, there will be very little difference in the final AM JEM.
Region 8 has agreed to include the UC work essentially as they presented it. I do not see strong reason to ask UC to redo their work on the GM JEM and cannot justify the contract $$ needed for this. They used a less mathematical approach but essentially did a 3 part fitting for the trionizing jobs (1972 to 1976, 1976 to 1980, and after 1980), a 1 part fitting for the separate tracks jobs (using the best fit line function in Excel), and 1 part fitting for the background jobs (data from all jobs combined and averaged).
I prefer keeping the 2 part fitting for the background jobs in the AM JEM to preserve the symmetry with the 2 part fitting of the track jobs. Are you OK with this?

An issue was raised about the wall mentioned in the OSHA report and whether the trionizing jobs were inside or outside before the wall was constructed in the mid 1970s. UC has confirmed that the main building was constructed in 1956 and began operation in 1957. The indoor jobs since 1957 when operations began included blender, cleanup, dryer, expander, feeder, mill, and resin. The outdoor jobs since the facility opened included track unload and track other. The railroad track was outside to the west of the main building. The wall was constructed outside in the railroad track area to isolate track unload area from the main building to provide additional dust control for the main building.
Krista asked that the LOESS plot be included. I don't quite see how including the plot is helpful. Please provide some additional information on why this is useful. I confess I don't understand what the plot is saying other than its bumby.
-----Thomas Bateson/DC/USEPA/US wrote: -----
To: Bob Benson/R8/USEPA/US@EPA
From: Thomas Bateson/DC/USEPA/US
Date: 10/05/2012 03:00PM
Cc: Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, brattin@srcinc.com, HILBERTJ@UCMAIL.UC.EDU
Subject: Re: JEM based on Arithmetic Mean [response]
Bob,
Thanks for sharing the proposal. You asked for a reply by today. This write-up is a good start but we are not yet ready to concur. Krista provided some specific comments. Our general comments follow.
NCEA thinks the methods proposed here (as we think we understand them) are generally appropriate and potentially scientifically defensible but, as written, would not stand up to peer-review without greater detail in the text to explain the proposed method, justify it and defend the decisions that are made. Further, it won’t stand up without statistics to more formally compare the different strategies. The proposal needs to be made more defensible. A non-exhaustive list includes: explanation of validity of averaging of samples of different duration, link of clear IH considerations to choices made in modeling, and detailed reasoning for exclusion of outlier for modeling background data). While several pieces alleviate influence of post-1980 indoor estimates on the prior exponential fit, fits to show lack of sensitivity to this assumption are needed. We had made a previous comment that it should be shown that the inclusion of the post-1980 data was not influencing the early 1970 fit but then we moved on to two- and three-piece models. This may not be an issue but it

should be shown.
NCEA is requesting a revised proposal with the relevant statistics for assessing goodness of fit (Leonid has asked for Chi squares statistics rather than MSE [not sure how to compare MSEs from models with different numbers of parameters]). The large difference in the number of parameters used for the different models may impact our interpretation of the results. Nonetheless, as Bob stated in the proposal email, the plots appear to show fits that are generally reasonable.
NCEA also notes that none of the presented materials are based on the variance-weighted analyses and until that can be shared, we should not collectively proceed. NCEA can assist with this if there is a need.
NCEA would also like to clarify that the first point in Bob's email of 10/1 @12:58 PM which states that this proposed approach is "qualitatively similar to the approach used by UC in deriving the GM-based JEM." Does this mean that the GM-based JEM will be re-done based on the same approach of allowing for a three-piece function with cut-point demarking the period of different IH practices? The methods for the two JEM should follow the same general outline – just in regular vs. in log space.

Enjoy Paris next week. Hopefully, Bill, David, Tim and Linda will be available to consider our points and we can reconvene upon your return.
Tom
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Bob Benson---09/21/2012 11:05:11 AM---Attached is the Region and UC recommended procedure for developing the Marysville Job Exposure Matix
From: Bob Benson/R8/USEPA/US
To: Thomas Bateson/DC/USEPA/US@EPA, Krista Christensen/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, Danielle DeVoney/DC/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA, brattin@srcinc.com, HILBERTJ@UCMAIL.UC.EDU
Date: 09/21/2012 11:05 AM
Subject: JEM based on Arithmetic Mean

Attached is the Region and UC recommended procedure for developing the Marysville Job Exposure Matix based on the arithmetic mean of the IH data. Please review.
A conference call to discuss is Sept 27, 1:00 PM (EDT) [11:00 am, MDT]. At the call I will ask for concurrence or presentation of a workable alternative.
Call in number: 1-866-299-3188
Access code: 303-312-6712#
I will open the line from Region 8.
[attachment "Section F4 revision 3.docx" deleted by Thomas Bateson/DC/USEPA/US] [attachment "Figure F4.1 (LOESS).pdf" deleted by Thomas Bateson/DC/USEPA/US] [attachment "Figure F4.2 (trionize independent b).pdf" deleted by Thomas Bateson/DC/USEPA/US] [attachment "Figure F4.3 (trionize common b).pdf" deleted by Thomas Bateson/DC/USEPA/US] [attachment "Figure F4.4 (bkg fit).pdf" deleted by Thomas Bateson/DC/USEPA/US]